NBER WORKING PAPER SERIES

WHO OFFERS TAX-BASED BUSINESS DEVELOPMENT INCENTIVES?

R. Alison Felix
James R. Hines, Jr.

Working Paper 17466
http://www.nber.org/papers/w17466

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
September 2011

The authors thank Andrew Fayad, Sarah Saeed, and Theodosia Tenia for excellent research assistance, and Dhammika Dharmapala, Bradley Heim, Jessica Stahl and various seminar participants for comments on earlier drafts. The views expressed in this paper are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City or the Federal Reserve System. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

Who Offers Tax-Based Business Development Incentives?
R. Alison Felix and James R. Hines, Jr.
NBER Working Paper No. 17466
September 2011
JEL No. H25,H71,H73

ABSTRACT

Many American communities seek to attract or retain businesses with tax abatements, tax credits, or tax increment financing of infrastructure projects (TIFs). The evidence for 1999 indicates that communities are most likely to offer one or more of these business development incentives if their residents have low incomes, if they are located close to state borders, and if their states have troubled political cultures. Ten percent greater median household income is associated with a 3.2 percent lower probability of offering incentives; ten percent greater distance from a state border is associated with a 1.0 percent lower probability of offering incentives; and a 10 percent higher rate at which government officials are convicted of federal corruption crimes is associated with a 1.2 percent greater probability of offering business incentives. TIFs are the preferred incentive of communities whose residents have household incomes between $25,000 and $75,000; whereas TIFs are much less commonly offered by communities whose residents have household incomes below $25,000. The need to finance TIFs out of incremental tax revenues may make it infeasible for many of the poorest of communities to use TIFs for local business development.

R. Alison Felix
Federal Reserve Bank of Kansas City
1 Memorial Drive
Kansas City, MO 64198-0001
alison.felix@kc.frb.org

James R. Hines, Jr.
Department of Economics
University of Michigan
343 Lorch Hall
611 Tappan Street
Ann Arbor, MI 48109-1220
and NBER
jrhines@umich.edu

1. Introduction

Local governments in the United States compete with each other to attract businesses and thereby enhance the economic prospects of local residents. This competition takes many forms, commonly including offers of tax-based incentives to firms that can be induced to establish, expand, or maintain local business operations. These tax-based incentives consist of direct tax benefits, that include abatements of existing taxes or credits against potential tax liabilities, and the use of tax increment financing (TIFs) of business-oriented infrastructure projects.

Despite the attractiveness of encouraging local business activity, many jurisdictions in the United States have been unwilling to provide tax-based business development incentives. This reluctance stems from many sources, including the potential revenue costs of such concessions, doubts about their effectiveness in encouraging business activity, a philosophy that across the board tax reductions are more effective than targeted tax incentives, and perhaps an evaluation that the benefits of greater business activity are not worth the costs. Communities with differing economies and demographics may well evaluate these tradeoffs differently. Furthermore, even governments of communities that agree on the potential value of targeted tax incentives may not all offer them, given the realities of bureaucratic and political barriers to implementing programs that require effective action.

The goal of this paper is to understand why cities and counties offer the tax-based business incentives that they do. The analysis starts by identifying the characteristics of U.S. communities that are associated with provision of tax-based business incentives. Then the empirical work considers only those communities that provide incentives, distinguishing features associated with providing TIFs from features associated with providing tax abatements and credits.

Several patterns are evident in the data. Heavily populated cities and counties, those with low median incomes, and those with larger concentrations of manufacturing industries, are the most likely to offer business incentives. The correlations of these characteristics and the provision of business incentives at least in part reflect the value that communities with economic needs attach to attracting new employment opportunities, and the willingness of these communities to forego tax revenue in order to get these opportunities.

Communities with lower incomes are more likely than others to offer business tax incentives, but this proclivity is no more pronounced among those with higher fractions of very poor residents (below $25,000 household income) than it is among communities with higher fractions of middle income residents ($25,000 - $75,000 household income). The need for economic activity may be greatest in the poorest communities, but business tax incentives somewhat less effective there than elsewhere, and more difficult for local governments to implement.

Two additional noteworthy features characterize communities offering business tax incentives. The first is that communities located close to state borders are significantly more likely than others to offer incentives. Proximity to other states increases the competitiveness of the environment for attracting business, driving communities to offer attractive packages even to retain existing businesses. Furthermore, the prospect of attracting businesses and accompanying tax revenue from other states may increase the willingness of state governments to offer financial and other assistance to their own communities that provide business development incentives.

The second feature is that cities and counties in states with troubled political cultures demonstrate the greatest willingness to offer business development incentives, the evidence indicating that increasing the rate at which government officials are convicted of federal corruption crimes by 1 per 100,000 residents over a 13 year period is associated with a 2.9 percent greater chance that a community will offer business incentives. While it may be farfetched to interpret this evidence to suggest that small numbers of corrupt and quasi-corrupt government officials in these jurisdictions provide business incentives in return for cash, political support, or other forms of payouts, a different, and perhaps only slightly more flattering, interpretation is that jurisdictions in states with troubled political cultures are more likely than others to have dysfunctional tax and regulatory systems that make it difficult for them to compete for businesses except by offering special incentives.

The second part of the paper's empirical investigation considers only those communities offering some business tax incentives, identifying the characteristics associated with provision of direct tax reductions, in the form of tax abatements or tax credits, rather than provision of infrastructure improvements (such as new roads and sewer facilities) facilitated by tax increment financing. Tax increment financing typically entails debt-financed projects for which subsequent

additional revenue (arguably) attributable to enhanced business activity is devoted to paying off the debts incurred in undertaking the infrastructure improvements. Among jurisdictions that offer incentives, those with significant numbers of households with incomes less than $25,000 are the most likely to offer tax reductions rather than TIF-supported infrastructure programs, whereas those with significant numbers of households with incomes between $25,000-$75,000 are the most likely to offer TIFs rather than tax reductions. By this measure TIFs appear not to be effectively directed toward the lowest-income communities. And political culture appears to influence the form as well as the level of development incentives: increasing the rate at which government officials are convicted of federal corruption crimes by 1 per 100,000 residents over a 13 year period is associated with a 5.9 percent greater probability that a community will offer tax reductions rather than TIFs.

Government expenditures on core infrastructure such as roads and utilities are potentially influenced by some of the same considerations that prompt adoption of business-directed TIF programs, so it is instructive to compare patterns of infrastructure spending with provision of business incentives in the form of TIFs. The evidence indicates that middle-income communities are no more likely than low-income communities to concentrate their government expenditures on infrastructure, which is very different than the pattern of TIF provision. The infrastructure spending pattern suggests that low-income communities fail to offer TIFs not because local infrastructure is unproductive, but for some other reason – possibly related to the difficulty of obtaining financing. Additionally, government infrastructure spending shares the feature of TIFs of being concentrated in communities whose states have less troubled political cultures.

The empirical patterns are consistent with purposeful choice of business development incentives. Communities with low-income residents stand to benefit from employment and other economic opportunities that accompany greater business operations, but are often unable to use TIF programs due to the inability of even enhanced business activity to generate sufficient local tax revenue to retire debts acquired in undertaking the accompanying infrastructure projects. Self-interest of a different kind may be at work in the proclivity of communities in states with higher rates of federal corruption convictions to favor direct tax benefits over TIFs, though this pattern may also reflect bond market skepticism of the ability and willingness of troubled political systems to repay in full any obligations incurred in the course of providing business infrastructure.

The second section of the paper discusses the challenges that communities face in using business development incentives to attract and retain business activity. The third section describes the available data on the practices of American communities in offering tax-based business incentives in 1999. The fourth section presents the results of estimating the determinants of who offers business incentives; the fifth section presents the results of estimating, among communities offering some kind of incentive, the determinants of who offers tax reductions or TIFs to the exclusion of the other. The sixth section compares TIF provision to government expenditures on infrastructure, and the seventh section is the conclusion.

2. Business Development Incentives

Business development incentives have the potential to attract investment, employment, and net tax revenues to communities offering them. Diamond and Mirrlees (1971) identify the efficiency costs that jurisdictions incur by attempting to tax returns earned by mobile business capital, noting that taxes on less-mobile factors are apt to entail smaller costs with the same distributional effects, particularly for jurisdictions that are too small to affect market rates of return.[1] Tax abatements, tax credits and TIFs, if offered on a selective basis to the most mobile businesses, and those that generate spillovers to other firms, can permit communities to maintain business, property, and sales taxes that generate revenue without reducing business activity to the same degree that they would in the absence of incentives.[2] As a practical matter, however, given the difficulty of distinguishing businesses on the basis of potential mobility, and the restricted set of tax instruments available to local communities, governments face tradeoffs between raising tax revenues and attracting business activity.

Despite their obvious appeal to investors, it is not guaranteed that business development incentives encourage local economic activity, as incentives can be costly, possibly coming at the expense of general tax reductions, education or infrastructure improvements, or other uses of funds that could impact business activity to an even greater extent than do incentives. Bartik (1991) offers a critical survey of earlier empirical studies of the impact of state and local

[1] See Gordon (1986) for an elaboration of this argument and Gordon and Hines (2002) for a further exposition.
[2] Keen (2001) and Hong and Smart (2010) analyze the welfare consequences of distinguishing the tax treatment of more-mobile and less-mobile investments in settings in which jurisdictions compete for mobile investments; Garcia-Mila and McGuire (2002) consider tax incentives in an environment in which there are agglomeration economies.

economic development policies, and business tax incentives in particular; Wasylenko (1997) and Fisher and Peters (1997) provide updates and extensions. Most of the surveyed studies, including Newman (1983), Wasylenko and McGuire (1985), and Papke (1994), conclude that provision of business tax incentives contributes to local business investment, employment, and economic growth, though others, including Carlton (1983) and Boarnet and Bogart (1996), report few or no discernible effects. Since the level of local economic activity is influenced by many considerations, it can be difficult to identify the impact of development incentives independently of other factors that may be correlated with provision of incentives. For example, some communities offering incentives may do so because they would otherwise have little economic activity, or fear that economic activity would decline; whereas others offer incentives as part of a package of successful business-friendly measures, including robust underlying growth trends.

More recent studies attempt to evaluate the effect of business development incentives in ways that attempt to limit the potential impact of omitted variables. Several of these studies concern enterprise and empowerment zone programs that provide packages of tax reductions and credits. O'Keefe (2004) uses propensity score matching to compare the experiences of California communities designated as enterprise zones with otherwise-similar communities that were not enterprise zones, finding that enterprise zone designation is associated with more rapid employment growth; Neumark and Kolko (2010) revisit the California enterprise zone program using later data and more fine-grained geographical information, reporting insignificant employment effects. Hanson (2009) considers communities throughout the United States designated as federal empowerment zones and others that unsuccessfully applied for empowerment zone designation; a simple comparison indicates that empowerment zone designation is accompanied by rising employment and declining poverty rates, though these effects are insignificant in instrumental variables specifications. Greenstone and Moretti (2003) compare income and property value growth in counties that received "million dollar plants" – very large new investments – to income and property value growth in counties that just missed being chosen as locations for the new plants. The study reports significant differences, with earnings in affected industries, and property values generally, growing more rapidly in the winning counties. This finding is consistent with evidence for Michigan (Anderson, 1990) and Indiana (Man and Rosentraub, 1998) that property values grow more rapidly in cities offering

TIFs than in observationally-similar cities that do not, though Dye and Merriman (2000) report the opposite result for cities in the Chicago area.

Effects of incentives appear to differ according to the setting. For example, Hoyt, Jepsen and Troske (2008) find that training and tax incentives provided by Kentucky positively affect employment in counties receiving the incentives, and report that the effects are particularly strong in counties along the state border; Bondonio and Greenbaum (2007) offer evidence that enterprise zone programs in ten states encourage employment and capital spending by new establishments to a greater degree than existing establishments.

Communities differ in their willingness to offer business development incentives. In an extensive review of the earlier literature, Wolman and Spitzley (1996) document the many variables that have been used to explain the proclivity to offer incentives, including, most frequently, local government structure, fiscal stress, economic need, economic distress, economic openness or citizen access, and city size. For example, Anderson (1990) finds a positive correlation between prior high property value growth and TIF adoption by Michigan cities, suggesting that TIFs are more likely to be used in cities that experience and anticipate rapid property value growth, though it is difficult to establish the direction of causality. Man (1999) finds that low income Indiana communities are the most likely to adopt TIFs, and that declining intergovernmental aid, growth in property tax liabilities, adoption of TIFs by neighboring jurisdictions, a high concentration of service industries, a high property tax price of local public goods, and existing use of property tax abatements are all positively correlated with TIF adoption. Byrne (2005) reports similar evidence that Chicago area communities are more likely to offer TIFs if their neighbors do so, and within the city of Chicago, Gibson (2003) finds that disadvantaged neighborhoods (though not the very poorest) are the most likely to offer TIFs. Anderson and Wassmer (1995) find similar patterns in the adoption of property tax abatements: in their panel of Detroit metropolitan area communities, those with higher incomes and higher property tax prices of local public services wait longer to offer property tax abatements. To a certain degree, differences in willingness to offer incentives may reflect the composition of the industries and firms that are potential beneficiaries: Byrnes, Marvel and Sridhar (1999) find that Ohio jurisdictions are more likely to offer tax abatements to firms with higher credit ratings and those offering to create significant numbers of new jobs, which is consistent with evidence

provided by Fisher and Peters (1998) that business development incentives are concentrated among large plants.

There is limited existing research on the determinants of the type of incentive a jurisdiction offers. One such study by Rubin and Rubin (1987) examines the choice by Illinois cities to offer cash subsidies, revenue bonds, water rate reductions or infrastructure to attract and retain business activity. The study reports that cities with low incomes and high unemployment are more likely than affluent cities to offer infrastructure improvements, tax abatements and TIFs, but no more likely to offer less expensive alternatives, such as industrial revenue bonds; furthermore, cities with large internal employment and high administrative capacity are the most likely to offer any kind of incentive.

3. Tax-Based Business Incentives in 1999

The empirical work described in sections 4, 5 and 6 of the paper is based on information drawn from a survey of the chief development officers of American municipalities and counties by the International City/County Management Association (ICMA), a trade association of local government officials. The survey was conducted between fall 1999 and spring 2000.[3] The ICMA received 1,042 replies to 3,308 surveys distributed during that period, for a response rate of 31.5 percent. Among many other questions, this survey asks respondents to indicate "which of the following incentives your local government offers," with separate choices including tax abatements, tax credits, and tax increment financing.[4] A small number of the respondents in the ICMA survey did not answer the questions regarding economic development incentives. Among the 1,022 useable replies, 68 percent of the respondents report offering some kind of economic development incentive, and 56 percent report offering some kind of tax incentive. 36 percent report offering tax abatements, 17 percent report offering tax credits, and 34 percent report

[3] These data are available at: http://bookstore.icma.org/Economic_Development_1999_Data_C92.cfm. The ICMA administered similar surveys of American cities and counties in 2004 and 2009, but with significantly smaller sample sizes, which is why this paper analyzes the 1999 data.

[4] The complete list of potential incentives identified on the survey instrument is: tax abatements, tax credits, locally designated enterprise zones, federal/state designated enterprise zones, tax increment financing, grants, infrastructure programs, free land or land write downs, employee screening, training support, utility rate reduction, zoning/permit assistance, regulatory flexibility, relocation assistance, low-cost loans, one-stop permit issuance, special assessment districts, subsidized buildings, and other.

offering TIFs. These summary statistics along with other variables used in the empirical analysis are presented in Table 1.

The ICMA data were matched to U.S. Census of Population data on population characteristics for the same jurisdictions for 2000. Median household incomes of communities surveyed by the ICMA had a mean of $46,815 in 1999; the mean percentage of households with incomes below $25,000 was 27 percent, and the mean percentage of households with incomes between $25,000 and $75,000 was 48 percent. The population represented in this sample averages slightly more income than the U.S. population as a whole.[5] Among the communities in the ICMA sample, an average of 2.6 percent of workers over 16 used public transportation to commute to work in 2000, and an average of 14 percent of the population was employed in manufacturing.

The ICMA data also were matched to U.S. Census of Governments data on public finances for 1997. A measure of local core infrastructure spending was calculated by combining expenditures on air transportation, general public buildings, regular highways, toll highways, private transit subsidies, parking facilities, sewerage, solid waste, sea and inland port facilities, water utilities, electric utilities, gas utilities, and transit utilities. Core infrastructure spending averages 35 percent of total local government spending by the sampled communities.

Distances (in meters) from the center of each jurisdiction to the center of the nearest place (as defined by the National Historical Geographic Information System) located in another state were calculated using ArcGIS. Among the jurisdictions in the sample, the mean distance to the nearest city center across a state border is 129 kilometers.

State level variables were compiled from several sources. Information on top statutory state corporate tax rates, state sales tax rates, and state personal income tax rates was drawn from the World Tax Database (Office of Tax Policy Research, 2008). Total state tax revenue per capita was calculated using 1999 state tax revenue and population data from the U.S. Census Annual Survey of State Government Finances. Corruption rates were obtained from Glaeser and Saks (2004), who report information on rates at which federal, state and local public officials in

[5] In 1999, the median household income in the United States was $41,994, 28.7% of U.S. households earned less than $25,000, and 49% earned between $25,000 and $75,000. Since the ICMA data correspond to unweighted community means, whereas the U.S. data can be treated as community means weighted by population, the two sets of figures are not exactly comparable.

each state were convicted of federal corruption-related crimes between 1990 and 2002; their figures correspond to total convictions per 100,000 state residents (measured as the average of 1990 and 2000 Census populations) over this 13-year period. A dummy variable indicating whether a state permitted its local jurisdictions to offer TIFs in 1999 was created using information on state TIF statutes compiled by the Council of Development Finance Agencies (2008). Since highly motivated communities were able to avoid state TIF restrictions with creative policies, the TIF prohibitions are not absolute; and indeed, of the 346 communities that report offering TIFs in 1999, 14 are located in states that are coded as prohibiting TIFs.

The analysis that follows investigates the extent to which these community and state characteristics are associated with provision of business development incentives. Sample sizes vary depending on specification, and to date it has been possible to establish distances to the closest town in neighboring states for only 988 jurisdictions. The first part of the analysis concerns the determinants of whether or not a community offers tax incentives. The second part of the analysis considers only those communities offering tax incentives, evaluating the factors associated with offering TIFs to the exclusion of tax abatements or tax credits.

The rationale behind the second part of the analysis is that there is an unobserved community factor that influences whether to offer tax-based development incentives, and that this factor has the same effect on offering TIFs as it does on offering tax abatements and tax credits. It is then possible to identify the effect of other variables on this choice using the Chamberlain (1980) fixed effects logit procedure, in which the sample is selected to include only those jurisdictions either offering TIFs but not tax abatements or credits, or else offering either or both of tax abatements and credits, but not TIFs. This restriction further reduces the sample size to 346 in some specifications, and 332 in specifications including the distance variable.

4. Features of Jurisdictions Offering Business Development Incentives

There are noticeable differences between the population sizes and average incomes of communities offering tax incentives and those that do not. Figure 1 depicts fractions of sample jurisdictions offering tax incentives – tax abatements, tax credits or TIFs – in 1999. The two leftmost bars in the figure indicate that lower income communities are particularly likely to offer tax incentives: 65 percent of those with household median incomes below $34,000 offered tax

incentives, whereas only 42 percent of households with median incomes exceeding $55,450 did so. The second set of bars in Figure 1 reveal that communities with larger populations are more likely than others to offer tax incentives: 50 percent of communities with populations below 19,307 offered incentives, while 59 percent of communities with populations exceeding 75,400 did so.[6]

The income and population differences evident in the first and second sets of bars in Figure 1 appear to be statistically significant in regressions explaining propensities to offer tax incentives. The first column of Table 2 presents estimated coefficients from logit regressions in which the dependent variable takes the value one if a community reports offering any of tax abatements, tax credits, or TIFs to attract businesses, and zero if the community does not offer any of these incentives. The -1.2936 coefficient in column 1 indicates that, conditional on population size, lower income communities are significantly more likely than affluent communities to offer tax incentives. Evaluating the logit function at the sample means, the -1.2936 coefficient magnitude implies that an additional 10 percent of household median income is associated with a 3.2 percent lower likelihood that a community will offer some kind of tax incentive. The 0.3102 coefficient implies that greater population is associated with significantly enhanced likelihood of offering tax incentives, a 10 percent greater population being associated with a 0.8 percent greater likelihood of offering tax incentives (in this and subsequent cases, the impact of small changes are evaluated at sample means).

Each regression also includes controls for whether the observation is a county and whether the jurisdiction is located in a state that allowed TIFs in 1999. The -0.7797 coefficient indicates that counties are less likely to use tax incentives compared to cities and towns.[7] Not surprisingly, jurisdictions located in states that allow TIFs are more likely to use tax incentives.[8]

Columns 2 and 3 of Table 2 report modifications of this specification that consider aspects of income distribution other than just median income. The 3.0783 coefficient in the

[6] Cutoff values of income, population, and other variables used to construct the bar charts presented in Figures 1-4 and A1-A4 are chosen so that the bars correspond to the highest and lowest 25 percent of the sample; for example, of 1022 communities in the sample, 256 have median incomes below $34,000, and 256 have median incomes above $55,450.

[7] Of the 1022 jurisdictions in the sample, 127, or 12.4%, are counties.

[8] According to the Council of Development Finance Agencies, nine states did not have TIF statutes in 1999 including Arizona, Arkansas, Delaware, Kentucky, Massachusetts, North Carolina, New Jersey, Washington and West Virginia. By 2010, every state except Arizona had a TIF statute.

second column indicates that communities are more likely to offer incentives if they have larger fractions of their resident households with incomes below $25,000. Evaluated at data means, this coefficient together with the logit function implies that a 10 percent greater fraction of households with incomes below $25,000 is associated with a 7.6 percent greater likelihood of offering tax incentives. The 4.2498 coefficient in the same column indicates that a higher fraction of households with incomes between $25,000 and $75,000 is likewise associated with offering tax incentives; evaluated at sample means, the estimate implies that a 10 percent greater fraction of households with income between $25,000 and $75,000 is associated with a 10.5 percent greater likelihood of offering tax incentives. Greater population increases the chance of offering incentives to the same extent that it does in the regression reported in column 1.

The estimates in this regression appear to suggest that reducing a household's income from say $35,000 to $20,000 reduces the chance that the community in which it is resident will offer tax-based business incentives. This is not necessarily inconsistent with the regression results in column 1 (since the community's median household income will be affected only if $35,000 is below its median, which is unlikely), but nevertheless somewhat surprising. The regression reported in column 3 tests whether there is a significant difference between the effects of a greater fraction of households with incomes under $25,000 and the fraction of households with incomes between $25,000 and $75,000, finding that there is not: the -1.1714 coefficient is statistically insignificant. The subsequent regressions in Tables 2 and 3 obtain similar results, consistently indicating that the likelihood of offering incentives increases with the fraction of households with incomes below $75,000, but is insignificantly affected by the distribution of low-income households between the under-$25,000 category and the $25,000-$75,000 category.

The regressions in columns 4-7 of Table 2 add different individual explanatory variables to the specification in column 3. The -3.4491 coefficient in the regression reported in column 4 indicates that more urbanized communities, as captured by the fraction of their populations using public transportation, are less likely than others to offer tax-based development incentives.

The regression reported in column 5 of Table 2 includes as an explanatory variable the difference between the fraction of the population 65 years and older and the fraction 18 years and younger. Government spending tends to be greater in jurisdictions with younger populations (e.g., Case et al., 1993), which in turn may affect tax rates, service levels, and the desirability of

locating businesses there. The estimated -1.5127 coefficient indicates that the proclivity of younger communities to offer incentives is significantly different from that of older communities, conditional on population size and income distribution; the estimate implies that a 10 percent greater concentration of young population, or reduced concentration of elderly population, is associated with a 3.7 percent higher probability of offering tax incentives. This finding is consistent with the third set of bars in Figure 1. A community is classified as "Young" in Figure 1 if the fraction of the population 18 years old and under exceeds the fraction 65 years old and older by more than 0.189; conversely, a community is "Old" if the difference in these fractions is less than 0.0935. As the figure indicates, 57 percent of young communities offered tax incentives in 1999, whereas only 52 percent of the old communities did so.

Communities differ in the extent to which local industry is concentrated in manufacturing, which in turn is correlated with provision of business development tax incentives. The fourth pair of bars in Figure 1 depicts that communities with less than 8.64 percent of their workforces employed in manufacturing offer business tax incentives 48 percent of the time, whereas communities with greater than 18.3 percent of their workforces in manufacturing offer tax incentives 64 percent of the time. The regression in the sixth column of Table 2 includes the share of manufacturing employment as an explanatory variable, the estimated 3.3882 coefficient implying that a ten percent greater fraction of the workforce in manufacturing is associated with an 8.4 percent greater probability of offering tax incentives.

The fifth pair of bars in Figure 1 compares the rate at which communities located nearby and distant to state borders offer development incentives. The left bar indicates that 56 percent of communities located within 38.35 kilometers of the nearest city center across the state border offer tax incentives, while the right bar indicates that only 49 percent of communities located more than 220.5 kilometers do so. The regression reported in column 7 of Table 2 confirms that distance to the nearest city center across a state border has a significant effect after controlling for population and income distribution, the -0.2759 coefficient implying that ten percent greater distance is associated with a 0.7 percent lower probability of offering an incentive.

The regression reported in column 8 of Table 2 includes measures of a community's income distribution, population, urbanization, age distribution, manufacturing workforce, and distance to the nearest state in the same regression. The estimated coefficients on these

independent variables, and implied effects of the variables on likelihood of offering tax incentives, are generally similar to those in the previous regressions in which they appeared. The exception is the estimated effect of age, which is insignificant in this specification. The estimated impact of population increases in this specification, the 0.4562 coefficient implying that 10 percent greater population is now associated with a 1.1 percent greater chance of offering incentives. In addition, the estimated effect of manufacturing share decreases in this specification, the estimated 2.1907 coefficient implying that a ten percent greater fraction of the workforce in manufacturing is associated with a 5.4 percent greater probability of offering tax incentives.

State policies have the potential to influence community decisions of whether to offer business development incentives, and the regressions presented in Table 3 explore the impact of these policies. The regression reported in the first column of Table 3 adds state tax revenue per capita to the independent variables included in the regression reported in column 8 of Table 2. The 0.4318 coefficient on this variable is not statistically significant. The regression reported in column 2 of Table 3 adds state corporate tax rates, sales tax rates, and personal income tax rates as explanatory variables. The -0.1114 coefficient on the state corporate tax rate implies that higher state corporate tax rates are associated with a lower proclivity to offer tax incentives. However, the 0.3162 coefficient on the state sales tax rate and the 0.1153 coefficient on the state personal income tax rate both imply that higher state sales and individual income tax rates are associated with greater proclivity to offer tax incentives. State tax rates affect the returns to attracting or retaining businesses, but also reflect state attitudes about the appropriate size of government and level of taxation, which is very possibly related to views on tax incentives, thereby making it difficult to offer direct interpretations of the tax rate coefficients – other than to note that higher personal taxes are associated with greater likelihood of offering incentives, and higher business taxes the reverse.

The sixth set of bars in Figure 1 shows the rate at which communities located in states with low and high rates of public corruption convictions provide tax incentives. Jurisdictions located in states with high rates of public corruption convictions appear more likely than others to offer tax incentives: 67 percent of these communities offer incentives, compared to only 53 percent of communities in states with low rates of public corruption convictions. Column 3 of Table 3 adds the state corruption conviction rate variable to the specification reported in column

8 of Table 2, the 0.0776 coefficient indicating that states with more troubled political cultures are more likely than others to offer tax incentives. The estimate implies that increasing the number of state corruption convictions by one per 100,000 state residents over the 1990-2002 period is associated with a 1.9 percent greater chance that a community will offer business development incentives; since the mean number of convictions is 4.0, this corresponds to a 25 percent increase in the conviction rate.

Column 4 of Table 3 presents estimated coefficients from regressions that include all of the independent variables appearing in the regression reported in column 8 of Table 2, plus the state-level variables of tax revenue per capita, corruption rate, and state corporate tax rates, sales tax rates, and personal income tax rates. The results are quite similar to those in regressions that include subsets of the variables, though it is noteworthy that the magnitude of the estimated effects of state corruption rates is higher, implying that increasing the number of state corruption convictions by one per 100,000 state residents over the 1990-2002 period is now associated with a 2.9 percent greater chance that a community will offer business development incentives. The estimated effects of manufacturing share and age are no longer statistically significant in this specification.

Overall, regressions in Tables 2 and 3 suggest that jurisdictions are more likely to offer tax-based business development incentives if they have higher fractions of households with median incomes less than $75,000, have larger populations, are more urbanized, are located closer to a state border, and are located in states with relatively troubled political cultures, low corporate tax rates, and high personal and sales tax rates. These patterns suggest that cities and counties that, due to their size, urban density, and concentration of low-income residents, stand to gain the most from expanding the scale of local economic activity are more likely than others to offer business development incentives. Communities, on which competitive pressures bear most strongly, including those proximate to state borders and those in states with troubled political cultures, are also more likely than others to offer incentives. It is worth noting that simple interpretations of these patterns take community attributes to be independent, and therefore unaffected by development policy choices – which has the potential to lead to erroneous inference if, for example, certain types of development policies systematically influence community income levels. While it is certainly possible that income levels are affected by development policies (indeed, that is often the motivation for the development policies), these

effects are unlikely to be so large as to swamp other sources of income differences and thereby significantly influence the regression results; moreover, the most likely bias introduced by the effect of development policies on local incomes works against the regression pattern that the poorest communities are the most likely to offer incentives.

5. Tax Reductions and TIFs

Communities providing tax-based business development incentives differ in the types of incentives they offer, and these differences appear to be related to community characteristics. Figure 2 depicts the rates at which communities of different incomes – those with median household incomes below $34,000, and those with median household incomes above $55,450 – offer incentives of different types. Lower-income communities are more likely to offer tax incentives of any type, but this proclivity is most strongly evidenced in providing tax abatements and credits, and much less so in providing TIFs. Among communities with median household incomes below $34,000, 51 percent offer tax abatements and 27 percent offer tax credits; whereas among communities with median household incomes above $55,450, 23 percent offer tax abatements and only 7 percent offer tax credits. Rates are much closer in the case of TIFs, which are provided by 33 percent of the low-income communities and 27 percent of the high-income communities.

Table 4 presents estimated coefficients from logit regressions in which the sample consists of communities in two groups: those offering TIFs but not tax abatements or credits; and those offering tax abatements or tax credits (or both), but not TIFs. This corresponds to the fixed-effects logit procedure proposed by Chamberlain (1980) in which there is an unobserved fixed effect – in this case, a desire to offer tax-based business development incentives. The dependent variable in these regressions takes the value one if a community provides tax abatements or tax credits (or both) but not TIFs; the dependent variable is zero if instead the community provides TIFs but not abatements or credits. The regressions in Table 4 use a much smaller sample than those presented in Table 3, since the sample consists only of the 346 communities offering either tax abatements and credits (or just one of those) or TIFs, but not both.

The -1.5210 coefficient in the regression reported in the first column of Table 4 indicates that low-income communities are significantly more likely than others to offer abatements or credits rather than TIFs. The coefficient implies that 10 percent lower median household income is associated with 3.4 percent greater likelihood of offering abatements or credits, conditional on offering any business tax incentives at all. Communities with larger populations are more likely to offer TIFs – which is consistent with the evidence presented in Appendix Figure A1, that tax abatements are equally likely to be used in small and large jurisdictions while TIFs are much more likely to be used in larger cities. The -0.3502 coefficient implies that greater population is associated with significantly enhanced likelihood of offering TIFs, a 10 percent greater population being associated with a 0.8 percent greater likelihood of offering TIFs compared to abatements or credits.

Column 2 of Table 4 presents estimated coefficients from a specification that measures income effects by the fraction of households with incomes under $25,000 and the fraction of households with incomes between $25,000 and $75,000. The 5.1677 coefficient indicates that, conditional on offering incentives of any kind, communities are significantly more likely to offer abatements or credits as the fraction of households with incomes below $25,000 increases. The coefficient estimate implies that increasing the fraction of households with incomes below $25,000 by 10 percent is associated with an 11.4 percent greater likelihood of offering abatements or credits rather than TIFs. The fraction of households in the $25,000-$75,000 range has the opposite effect, as indicated by the -5.4762 coefficient, which implies that increasing the fraction of households with incomes between $25,000 and $75,000 by 10 percent is associated with a 12.1 percent greater likelihood of offering TIFs rather than abatements or credits. The 10.6439 coefficient in the regression reported in column 3 confirms that this difference is statistically significant: TIFs are much more likely to be the incentive of choice for middle-income communities, whereas tax abatements and credits are the incentives used by low-income communities.

Column 4 of Table 4 reports coefficients from a regression that adds to this specification the urbanization variable, which is the fraction of a community's population using public transportation. The implied effects of household income remain very similar to those in the regression reported in column 3, while the -8.8329 coefficient indicates that, conditional on offering some kind of business incentive, urban communities are much more likely to offer TIFs

than they are to offer abatements or credits. The coefficient implies that increasing public transportation use by ten percent of the population (the mean value is 2.6 percent) is associated with a 19.4 percent greater likelihood of offering TIFs rather than abatements or credits.

Columns 5, 6 and 7 of Table 4 report regressions that replace the urbanization variable with, respectively, measures of population age, the fraction of the workforce employed in manufacturing, and distance to the nearest city center across the state border. From the information depicted in Appendix Figure A2, it appears that communities with younger populations are more likely than others to offer TIFs, though this comparison does not condition on income; the regression in column 5 indicates that, conditioning on income, the effect of youth on TIF provision is statistically insignificant.

The effects of the share of the workforce employed in manufacturing (column 6) is likewise insignificant, which is not surprising from casual inspection of Appendix Figure A3, in which both tax abatements and TIFs appear much more likely in jurisdictions with a high share of manufacturing employment. The regression in column 7 implies that jurisdictions closer to state borders are more likely to offer abatements or credits, the -0.3317 coefficient implying that increasing the distance to the nearest city center across the state border by 10 percent increases the likelihood of offering TIFs (as opposed to credits or abatements) by 0.7 percent. This distance result is consistent with Figure 3 which shows that abatements and credits are more likely to be offered in jurisdictions within 38.35 kilometers of a city center across the state border while TIF provision does not appear to depend on distance. Column 8 of Table 4 presents coefficients from a regression that includes all of these variables, with results that are similar to those obtained by including them separately – with the exception of population, which is no longer significant.

Table 5 presents estimated coefficients from regressions that add state-level variables to the specification reported in column 8 of Table 4. In the regression reported in column 1 of Table 5, the -4.7123 coefficient on the log of tax revenue per capita indicates that communities located in states with ten percent larger per capita tax revenues are 10.0 percent more likely to provide TIFs than abatements or credits. The effect of tax revenue per capita becomes statistically insignificant in regressions controlling for state tax rates as shown in column 2 of Table 5. In the regression reported in column 2, higher state corporate, sales and personal tax

rates are associated with the provision of TIFs rather than abatements or credits. These results suggest that jurisdictions in states with better financed governments are more likely to offer TIFs as opposed to abatements or credits, very possibly reflecting the greater creditworthiness of local governments in those states.

Tax abatements and tax credits are more likely to be offered in communities located in states with high rates of public corruption convictions, as evidenced in Figure 4, though there appears to be little discernable difference between the rates at which these communities offer TIFs. The regression reported in column 3 of Table 5 adds the state corruption rate variable to the specification presented in column 8 of Table 4. The 0.3896 coefficient implies that increasing the number of public corruption convictions by one per 100,000 state residents over the 1990-2002 period, which is a 25 percent increase evaluated at the mean, is associated with a 0.8 percent greater likelihood that a community providing business development incentives will offer abatements or credits rather than TIFs. This effect persists at a slightly smaller magnitude in the regression reported in column 4 of Table 5, which includes the variables appearing in the regression reported in column 2, along with the corruption variable. In the specification reported in column 4, communities providing business development tax incentives are significantly more likely to offer TIFs than abatements or credits if few of their households have incomes below $25,000, many have incomes between $25,000 and $75,000, a large fraction of the population uses public transportation, if the community is located far from the state border, and in a state with high tax rates and a relatively untroubled political culture.

6. TIF Financing and Infrastructure Productivity

Perhaps the most striking regularity in the regressions presented in Tables 4 and 5 is that, among communities offering business incentives, those with the lowest incomes are the least likely to attempt to attract businesses with TIFs. This empirical pattern suggests two possibilities. The first is that infrastructure is relatively unproductive in very low-income communities, so governments find that resources devoted to tax abatements and credits are more effective in attracting business activity than would be the same resources devoted to infrastructure financed with TIFs. The second interpretation of the evidence is that very low-income communities are effectively unable to offer TIFs due to the difficulty of generating

incremental tax revenue sufficient to cover payments on TIF bonds (as suggested by Dye and Sundberg, 1998). In the second interpretation, TIF-financed infrastructure might be productive but not in a way that can be relied upon to generate sufficient tax revenue, as a result of which the default premia required by the bond market make TIFs infeasible.

One way to distinguish these interpretations of the evidence is to evaluate the extent to which the patterns that describe community expenditures on core infrastructure resemble patterns of TIF provision. If the reason why low income communities offer tax incentives rather than TIFs is because infrastructure is unproductive, and infrastructure productivity is similar whether directly provided by governments or offered to businesses with TIFs, then infrastructure expenditures should be relatively concentrated in middle-income communities and not in low-income communities. Failure to find such an income pattern for infrastructure expenditure would not necessarily rule out productivity explanations of TIF provision, but would suggest that features of TIFs differ in important respects from other programs that provide infrastructure.

In order to evaluate the extent to which the characteristics of communities providing significant amounts of core infrastructure may resemble those offering TIFs, it is helpful to have a measure of infrastructure provision that is constructed similarly to the TIF measure. Of the 1022 communities in the sample, 346 report offering TIFs in 1999. Census of Governments data on community finances includes information on core infrastructure and total local government expenditures in 1997, from which it is possible to construct ratios of infrastructure to total spending; these ratios are useful measures of infrastructure intensity in part because they abstract from spending level differences across communities. A dummy variable is assigned the value one for communities with infrastructure spending ratios above a cutoff level, and zero otherwise; the cutoff value of 41.95 percent is chosen to produce 346 communities with high infrastructure spending levels, the same number as that of communities offering TIFs.

Appendix Figure A4 shows the rates at which communities of different incomes offer tax abatements, tax credits, tax increment financing, and concentrate their spending on public infrastructure. Lower-income communities are much more likely than others to concentrate public expenditures on infrastructure, and to offer tax abatements and tax credits. In contrast, the likelihood of offering tax increment financing is only slightly higher among lower-income communities.

Table 6 reports the results of estimating equations similar to those appearing in Tables 4 and 5, except that the infrastructure spending dummy variable is used in place of the TIF variable. The sample of 463 observations includes communities that offer tax abatements or credits, or have high infrastructure expenditures as fractions of total spending, but not both. It is clear that household incomes have very different effects in these regressions than they do in the corresponding regressions appearing in Tables 4 and 5. The 1.1756 coefficient in the first column of Table 6 indicates that communities with higher fractions of households with incomes below $75,000 are somewhat more likely than others to offer tax credits or abatements than to provide significant infrastructure, though this effect is statistically insignificant. The insignificant 0.1015 coefficient in the same column indicates that communities with higher fractions of households with incomes below $25,000 differ very little from others in the extent to which they provide infrastructure rather than offer tax abatements or credits. Similar income coefficients appear in the regressions reported in columns 2 and 3 of Table 6. Estimated coefficients on the corruption and distance variables have the same signs and similar significance as those appearing in Tables 4 and 5, indicating that communities located near state borders and in states with troubled political cultures are more likely than others to offer tax abatements and credits rather than provide significant amounts of infrastructure.

The regressions presented in Table 7 offer more direct comparisons of TIFs and publicly provided core infrastructure, the sample of 446 communities consisting of those that offer TIFs and those that have high infrastructure spending ratios, but not both. The dependent variable in these regressions takes the value one if a community concentrates its government expenditures on core infrastructure, but does not offer TIFs; the dependent variable is zero if instead the community provides TIFs but does not concentrate its expenditures on core infrastructure. The -4.6253 coefficient in the first column of Table 7 indicates that communities with higher fractions of households with incomes below $75,000 are more likely to offer TIFs than to provide significant infrastructure, and the 6.2077 coefficient in the same column indicates that this effect is somewhat more than reversed in the case of households with incomes below $25,000. Similar income effects appear in the regressions appearing in columns 2 and 3. Other coefficients indicate that communities with larger populations and higher fractions of residents using public transportation are more likely to offer TIFs than to provide large amounts of infrastructure,

though the effect of state corruption conviction rates is insignificant, indicating that political culture affects TIF provision and public infrastructure expenditures similarly.

The evidence in Tables 6 and 7 suggests that the attractiveness of TIFs to middle-income communities does not reflect their perceived value of infrastructure expenditures *per se*, since they do not concentrate their expenditures on infrastructure to any greater degree than do other communities. This lends force to the interpretation that the financing mechanism that underlies TIF provision is responsible for the inability of low-income communities to participate in greater numbers, though it does not rule out other possibilities.

7. Conclusion

American cities and counties frequently offer business development incentives; variations in this practice suggest some of their motives in doing so. Communities with low incomes, those located close to state borders, and those in states with more troubled political cultures are the most likely to provide incentives. Among the incentives provided, the poorest communities prefer to offer tax abatements and credits rather than TIFs, whereas for middle-income communities TIFs are much more likely to be the incentive of choice.

It is not difficult to understand the motives of low-income communities in seeking to attract greater business activity, with its accompanying economic opportunities for local residents, even if doing so entails foregoing potential sources of tax revenue. Communities in particularly competitive environments, such as those located near to state borders, similarly often feel compelled to offer incentives in order to attract and retain business activity that may benefit local residents.

The evidence on state political culture probably reflects the operation of more subtle considerations. In the international context Dharmapala and Hines (2009) report that tax havens, which are zero- or very low-tax countries and territories, score higher on measures of governance quality than do higher-tax countries with similar incomes and populations. The interpretation they offer is that the attractiveness of a low-tax environment would be insufficient to draw significant added business activity to a country otherwise plagued by bad governance and the economic problems that accompany it. The costs of bad governance in American cities and

counties are doubtless considerably smaller than they are in some other parts of the world, but their potential to influence resource allocation is nonetheless quite real. Tax havens operate by providing general tax relief to outside investors, which avoids at least some of the potential for insider deals and affords a more reliable business environment than one in which deals are individually negotiated and may need to be subsequently renewed. Similarly, American communities in states with less troubled political cultures tend to avoid offering business incentives, presumably because they prefer to tailor their general tax levels, spending programs, and other policies to attract businesses without designing specific deals for specific firms and industries.

Among communities that offer incentives there are clear patterns in which those with very poor residents, and those in states with more troubled political cultures, are less likely than others to provide TIFs. TIFs can be financed only in cases in which it might be reasonably anticipated that tax revenues will rise as a result of greater infrastructure expenditures, and this design feature makes it very difficult to use them in the poorest of communities. Troubled political cultures likewise impede the ability of communities to offer TIFs, and may also influence their desire to do so, since direct tax benefits in the form of abatements and credits may hold more appeal. Communities are most likely to offer business development incentives when they stand to benefit from the resulting business activity and the economic environment makes it feasible, or – in the most competitive situations – almost irresistible, that they do so.

References

Anderson, John E. 1990. "Tax Increment Financing: Municipal Adoption and Growth," *National Tax Journal*, vol. 43, no. 2, pp. 155-163.

Anderson, John E. and Robert W. Wassmer. 1995. "The Decision to 'Bid for Business': Municipal Behavior in Granting Property Tax Abatements," *Regional Science and Urban Economics*, vol. 25, no. 6, pp. 739-757.

Bartik, Timothy. 1991. *Who Benefits from State and Local Economic Development Policies?*, Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Boarnet, Marlon G. and William T. Bogart. 1996. "Enterprise Zones and Employment: Evidence from New Jersey," *Journal of Urban Economics*, vol. 40, no. 2, pp. 198-215.

Bondonio, Daniele and Robert Greenbaum. 2007. "Do Local Tax Incentives Affect Economic Growth? What Mean Impacts Miss in the Analysis of Enterprise Zones," *Regional Science and Urban Economics*, vol. 37, no. 1, pp. 121-136.

Byrne, Paul F. 2005. "Strategic Interaction and the Adoption of Tax Increment Financing," *Regional Science and Urban Economics*, vol. 35, no. 3, pp. 279-303.

Byrnes, Patricia, Mary K. Marvel, and Kala Sridhar. 1999. "An Equilibrium Model of Tax Abatement: City and Firm Characteristics as Determinants of Abatement Generosity," *Urban Affairs Review*, vol. 34, no. 6, pp. 805-819.

Carlton, Dennis W. 1983. "The Location and Employment Choices of New Firms: An Econometric Model with Discrete and Continuous Endogenous Variables," *Review of Economics and Statistics*, vol. 65, no. 3, pp. 440-449.

Case, Anne C., James R. Hines Jr., and Harvey S. Rosen. 1993. "Budget Spillovers and Fiscal Policy Interdependence: Evidence from the States," *Journal of Public Economics*, vol. 53, no. 2, pp. 285-307.

Chamberlain, Gary. 1980. "Analysis of Covariance with Qualitative Data," *Review of Economic Studies*, vol. 47, no. 1, pp. 225-238.

Council of Development Finance Agencies. 2008. "2008 TIF State-By-State Report."

Dharmapala, Dhammika and James R. Hines Jr. 2009. "Which Countries Become Tax Havens?" *Journal of Public Economics*, vol. 93, no. 9-10, pp. 1058-1068.

Diamond, Peter A. and James A. Mirrlees. 1971. "Optimal Taxation and Public Production, I: Production Efficiency; II: Tax Rules," *American Economic Review*, vol. 61, no. 1-2, pp. 8-27, pp. 261-278.

Dye, Richard F. and David F. Merriman. 2000. "The Effects of Tax Increment Financing on Economic Development," *Journal of Urban Economics*, vol. 47, no. 2, pp. 306-328.

Dye, Richard F. and Jeffrey O. Sundberg. 1998. "A Model of Tax Increment Financing Adoption Incentives," *Growth and Change*, vol. 29, no. 1, pp. 90-110.

"Economic Development 1999". International City/Council Management Association, Washington, D.C.

Fisher, Peter S. and Alan H. Peters. 1997. "Tax and Spending Incentives and Enterprise Zones," *New England Economic Review*, March/April, pp. 109-130.

Fisher, Peter S. and Alan H. Peters. 1998. *Industrial Incentives: Competition among American States and Cities*, Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Garcia-Mila, Teresa and Therese J. McGuire. 2002. "Tax Incentives and the City," *Brookings-Wharton Papers on Urban Affairs*, pp. 95-132.

Gibson, Diane. 2003. "Neighborhood Characteristics and the Targeting of Tax Increment Financing in Chicago," *Journal of Urban Economics*, vol. 54, pp. 309-327.

Glaeser, Edward L. and Raven E. Saks. 2004. "Corruption in America," NBER Working Paper No. 10821, September.

Gordon, Roger H. 1986. "Taxation of Investment and Savings in a World Economy," *American Economic Review*, vol. 76, no. 5, pp. 1086-1102.

Gordon, Roger H. and James R. Hines Jr. 2002. "International Taxation," in Alan J. Auerbach and Martin Feldstein, eds. *Handbook of Public Economics*, vol. 4 (Amsterdam: North-Holland, 2002), pp. 1935-1995.

Greenstone, Michael and Enrico Moretti. 2003. "Bidding for Industrial Plants: Does Winning a 'Million Dollar Plant' Increase Welfare?" NBER Working Paper No. 9844, July.

Hanson, Andrew. 2009. "Local Employment, Poverty, and Property Value Effects of Geographically-Targeted Tax Incentives: An Instrumental Variables Approach," *Regional Science and Urban Economics*, vol. 39, no. 6, pp. 721-731.

Hong, Qing and Michael Smart. 2010. "In Praise of Tax Havens: International Tax Planning and Foreign Direct Investment," *European Economic Review*, vol. 54, no. 1, pp. 82-95.

Hoyt, William H., Christopher Jepsen, and Kenneth R. Troske. 2008. "Business Incentives and Employment: What Incentives Work and Where?" IFIR Working Paper No. 2009-02, Institute for Federalism and Intergovernmental Relations, November.

Keen, Michael. 2001. “Preferential Regimes Can Make Tax Competition Less Harmful,” *National Tax Journal*, vol. 54, no. 4, pp. 757-762.

Man, Joyce Y. 1999. “Fiscal Pressure, Tax Competition and the Adoption of Tax Increment Financing,” *Urban Studies*, vol. 36, no. 7, pp. 1151-1167.

Man, Joyce Y. and Mark S. Rosentraub. 1998. “Tax Increment Financing: Municipal Adoption and Effects on Property Value Growth,” *Public Finance Review*, vol. 26, no. 6, pp. 523-547.

Neumark, David and Jed Kolko. 2010. “Do Enterprise Zones Create Jobs? Evidence from California’s Enterprise Zone Program,” *Journal of Urban Economics*, vol. 68, no. 1, pp. 1-19.

Newman, Robert J. 1983. “Industry Migration and Growth in the South,” *Review of Economics and Statistics*, vol. 65, no. 1, pp. 76-86.

Office of Tax Policy Research. 2008. *World Tax Database*. University of Michigan Ross School of Business.

O’Keefe, Suzanne. 2004. “Job Creation in California’s Enterprise Zones: A Comparison Using a Propensity Score Matching Model,” *Journal of Urban Economics*, vol. 55, no. 1, pp. 131-150.

Papke, Leslie E. 1994. “Tax Policy and Urban Development: Evidence from the Indiana Enterprise Zone Program,” *Journal of Public Economics*, vol. 54, no. 1, 37-49.

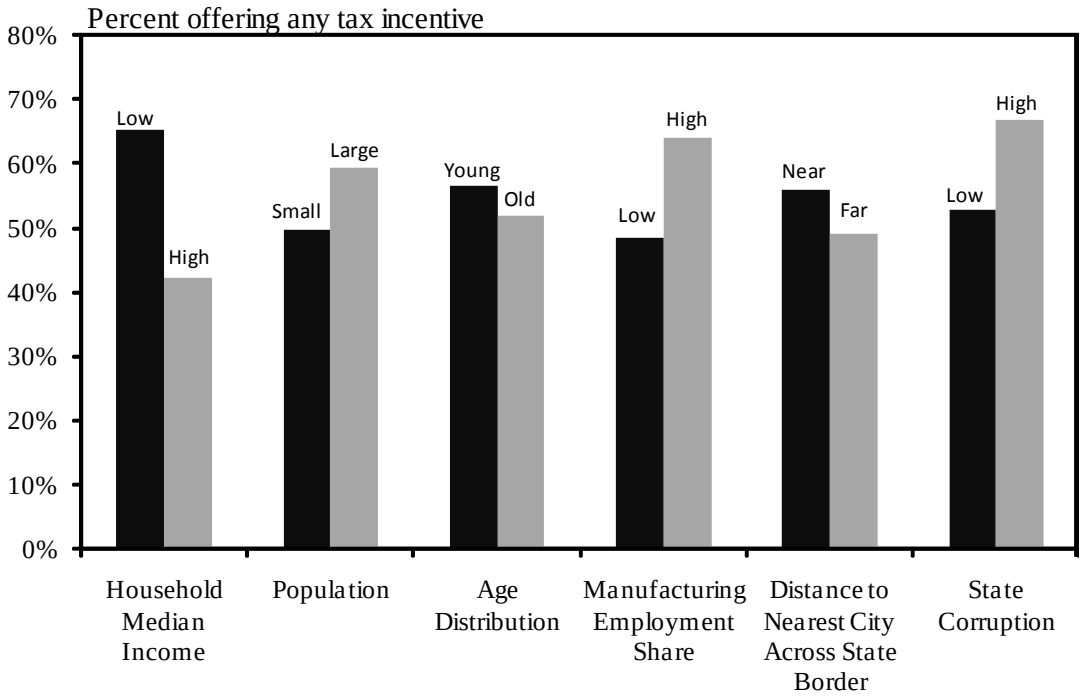
Rubin, Irene S. and Herbert J. Rubin. 1987. “Economic Development Incentives: The Poor (Cities) Pay More,” *Urban Affairs Review*, vol. 23, no. 1, pp. 37-62.

Wasylenko, Michael. 1997. “Taxation and Economic Development: The State of the Economic Literature,” *New England Economic Review*, March/April, pp. 37-52.

Wasylenko, Michael and Therese McGuire. 1985. “Jobs and Taxes: The Effect of Business Climate on States’ Employment Growth Rates,” *National Tax Journal*, vol. 38, no. 4, pp. 497-512.

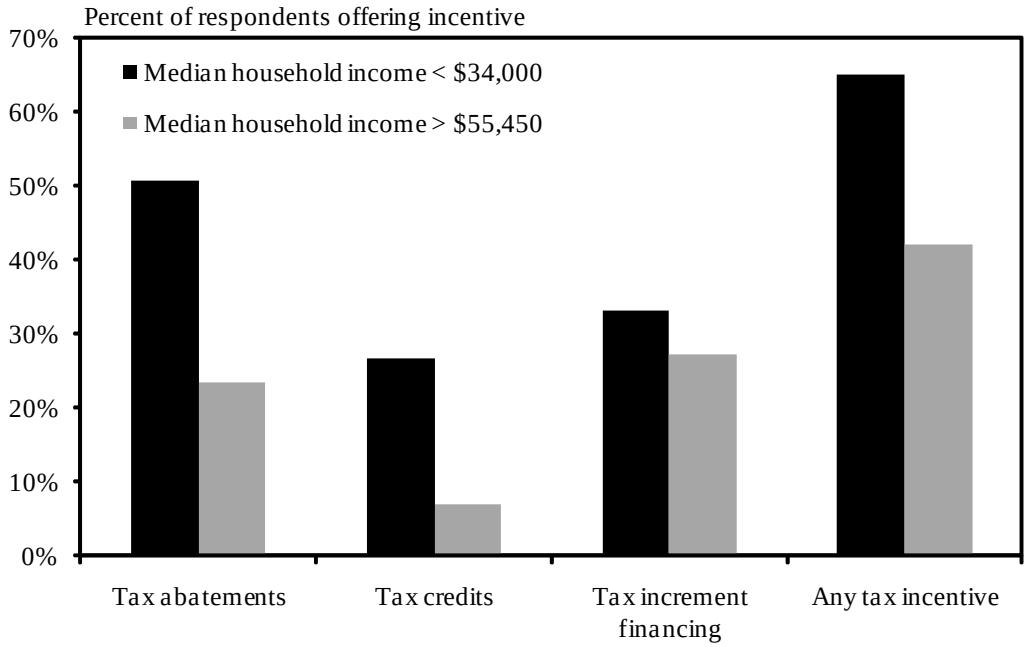
Wolman, Harold, and David Spitzley. 1996. “The Politics of Economic Development,” *Economic Development Quarterly*, vol. 10, no. 2, pp. 115-150.

Figure 1: Community Characteristics and Tax Incentives



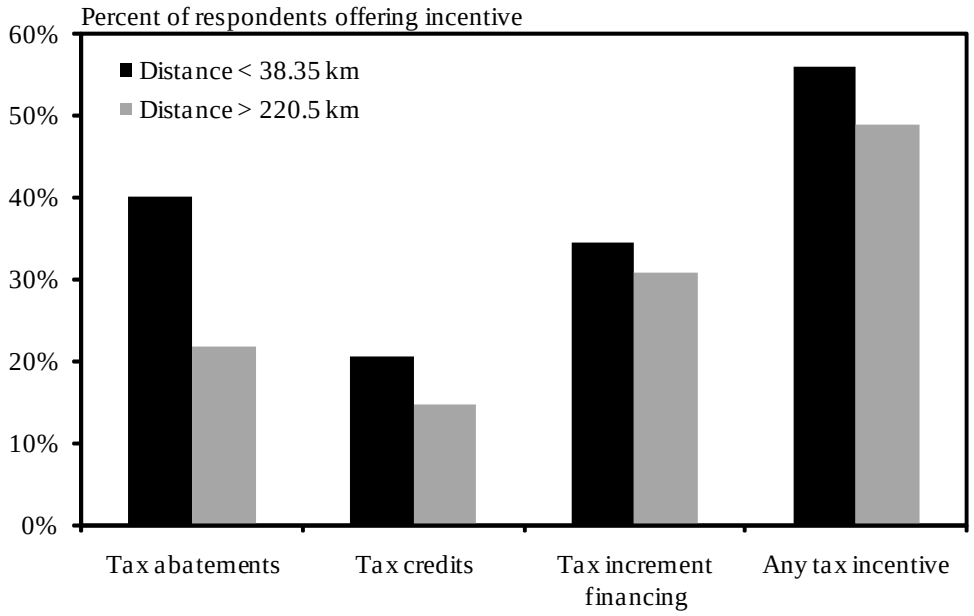
Note: Bar heights depict fractions of communities offering any kind of tax-based business development incentive (tax abatements, tax credits, or TIFs). The bars depict the behavior of communities with the highest and lowest 25 percent of values of the attribute listed on the horizontal axis. Low household income communities have median incomes below $34,000; high household income communities have median incomes above $55,450. Small communities have populations below 19,307; large communities have populations exceeding 75,400. In young communities the fraction of the population 18 years and under exceeds the fraction 65 years and over by more than 18.9 percent; in old communities the difference between these fractions is less than 9.35 percent. Communities have a low manufacturing employment share if less than 8.64 percent of the workforce is employed in manufacturing, and a high share if more than 18.3 percent is employed in manufacturing. A state border is near if it is closer than 38.35 kilometers, and far if its distance exceeds 220.5 kilometers. State corruption is low if there were fewer than 2.5 federal corruption convictions per 100,000 state residents between 1990-2002, whereas corruption is high if there were more than 5.4 convictions per 100,000 state residents.

Figure 2: Income Levels and Tax Incentive Alternatives



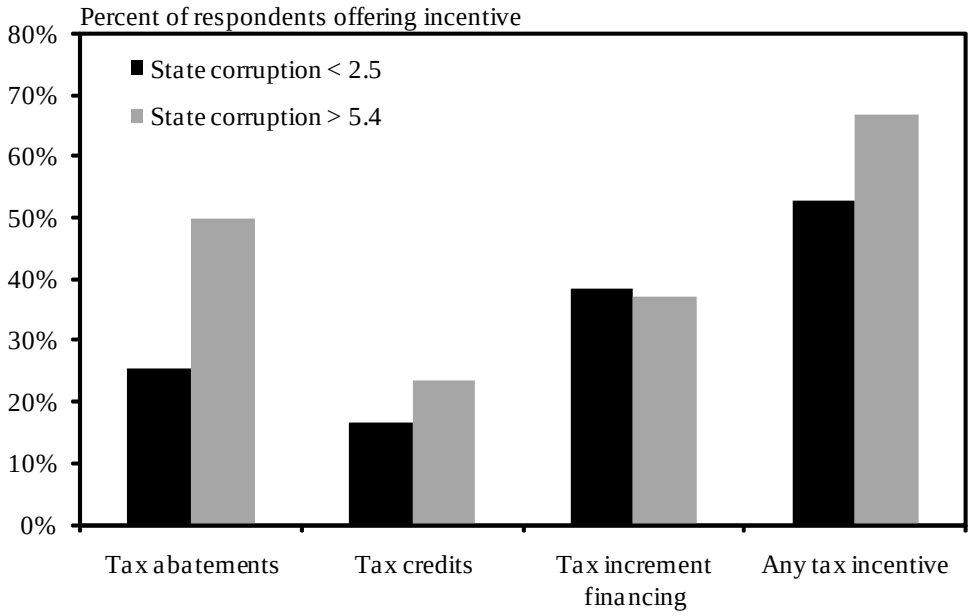
Note: The first pair of bars depicts fractions of communities offering tax abatements; the second pair of bars depicts fractions of communities offering tax credits; the third pair of bars depicts fractions of communities offering TIFs; and the fourth pair of bars depicts fractions of communities offering any of these tax-based incentives. In each pair the left bar corresponds to the 25 percent of the sample with median incomes below $34,000, and the right bar to the 25 percent of the sample with median incomes exceeding $55,450.

Figure 3: Distances to State Borders and Tax Incentive Alternatives



Note: The first pair of bars depicts fractions of communities offering tax abatements; the second pair of bars depicts fractions of communities offering tax credits; the third pair of bars depicts fractions of communities offering TIFs; and the fourth pair of bars depicts fractions of communities offering any of these tax-based incentives. In each pair the left bar corresponds to the 25 percent of the sample within 38.35 kilometers of a state border, and the right bar to the 25 percent of the sample farther than 220.5 kilometers from a state border.

Figure 4: Public Corruption Convictions and Tax Incentive Alternatives



Note: The first pair of bars depicts fractions of communities offering tax abatements; the second pair of bars depicts fractions of communities offering tax credits; the third pair of bars depicts fractions of communities offering TIFs; and the fourth pair of bars depicts fractions of communities offering any of these tax-based incentives. In each pair the left bar corresponds to the 23.6 percent of the sample located in states in which there were fewer than 2.5 federal corruption convictions per 100,000 state residents between 1990-2002, and the right bar to the 24.2 percent of the sample located in states in which there were more than 5.4 convictions per 100,000 state residents.

Table 1: Summary Statistics

Variable	Mean	Standard Deviation	# of Observations
Offer any incentive	0.6840	0.4652	1022
Offer any tax incentive	0.5558	0.4971	1022
Offer tax abatement	0.3630	0.4811	1022
Offer tax credit	0.1673	0.3734	1022
Offer TIF	0.3386	0.4734	1022
Median household income	46814.76	17456.68	1022
Percent of HH earning less than $25,000	0.2705	0.1181	1022
Percent of HH earning $25,000 to $75,000	0.4834	0.0701	1022
Percent of HH earning less than $75,000	0.7539	0.1413	1022
Population	85734.39	182878.90	1022
Percent using public transportation	0.0258	0.0367	1022
Percent of population 65 and over minus the percent 18 and under	-0.1395	0.0847	1022
Manufacturing (share of employment)	0.1415	0.0734	1022
Distance to nearest city across state border (meters)	129098.80	125311.50	988
County dummy	0.1243	0.3300	1022
TIF allowed by state government in 1999	0.8669	0.3398	1022
Local gov. infrastucture spending (% of total spending)	0.3541	0.1801	1018
State tax revenue per capita	1868.73	385.30	1022
State corporate tax rate	5.7427	3.3030	1022
State sales tax rate	5.3252	1.2018	1022
State personal income tax rate	5.2637	3.2595	1022
State corruption rate	3.9561	1.7520	1022

Note: The data summarized in this table characterize the 1022 American municipalities and counties providing usable replies to the ICMA survey in Fall 1999 and Spring 2000. The dummy variable "Offer any incentive" takes the value 1 if a community reports offering any kind of tax- or non-tax business development incentive, and is zero otherwise. The dummy variable "Offer any tax incentive" takes the value 1 if a community reports offering tax abatements, tax credits, or TIFs, and is zero otherwise. The dummy variable "Offer tax abatement," takes the value 1 if a community reports offering tax abatements, and is zero otherwise. The dummy variable "Offer tax credit," takes the value 1 if a community reports offering tax credits, and is zero otherwise. The dummy variable "Offer TIF," takes the value 1 if a community reports offering tax increment financing, and is zero otherwise. "Median household income" is drawn from the 2000 Census of Population for each community responding to the ICMA survey and represents 1999 income; "Percent of HH earning less than $25,000" is the percentage of community households earning less than $25,000 as reported in the 2000 Census of Population; similarly, "Percent of HH earning $25,000 to $75,000" is the percentage of community households earning between $25,000 and $75,000 as reported in the 2000 Census of Population, and "Percent of HH earning less than $75,000" is the percentage of community households earning less than $75,000 as reported in the 2000 Census of Population. "Population" of ICMA respondents is drawn from the 2000 Census of Population. "Percent using public transportation" is the fraction of the working population using public transportation to commute to work in 2000, as reported to the 2000 Census of Population. "Percent of population 65 and over minus the percent 18 and under" is the difference between the fraction of a community's population 65 years and older and the fraction 18 years and younger, as reported in the

2000 Census of Population. "Manufacturing (share of employment)" is the fraction of a community's workforce employed in manufacturing, as calculated from the 2000 Census of Population. "Distance to the nearest city across state border (meters)" is the distance, in meters, to the closest city or town in another state, calculated on the basis of city centers using ArcGIS, and limited to the 988 observations for which precise geographic codes could be matched to communities in the ICMA survey. "County dummy" takes the value 1 if a community is a county, and zero otherwise. "TIF allowed by state government in 1999" takes the value 1 if the state in which a community is located had statutes permitting TIF use in 1999, as reported by the Council of Development Finance Agencies (2008), and is zero otherwise. "Local gov. infrastructure spending (% of total spending)" is the ratio of community government spending on core infrastructure (air transportation, general public buildings, regular highways, toll highways, private transit subsidies, parking facilities, sewerage, solid waste, sea and inland port facilities, water utilities, electric utilities, gas utilities, and transit utilities) to total community government spending, as reported in the 1997 Census of Governments. "State tax revenue per capita" is the ratio of total state tax revenue in 1999 to state population on July 1, 1999, both as reported in the U.S. Census Annual Survey of State Government Finances. "State corporate tax rate" is the top statutory state corporate income tax rate in 1999 as reported in the World Tax Database (Office of Tax Policy Research, 2008) for the state in which a community is located. "State sales tax rate" is the general state sales tax rate in 1999 as reported in the World Tax Database (Office of Tax Policy Research, 2008) for the state in which a community is located. "State personal income tax rate" is the top statutory state personal income tax rate in 1999 as reported in the World Tax Database (Office of Tax Policy Research, 2008) for the state in which a community is located. "State corruption rate" is the number of public officials in the state in which a community is located convicted of federal corruption-related crimes between 1990 and 2002, per 100,000 state residents (measured as the average of 1990 and 2000 state population reported in the Census of Population), as reported by Glaeser and Saks (2004).

Table 2: Tax Incentives as Functions of Community Characteristics

(Dependent variable equals 1 if a community offers any of tax abatements, tax credits, or TIFs, and equals zero otherwise.)

Variable	1	2	3	4	5	6	7	8
Ln (Median household income)	-1.2936							
	(0.2053)							
Percent of HH earning less than $25,000		3.0783	-1.1714	-0.9916	-0.9229	-0.3484	-0.8764	0.0299
		(0.5757)	(1.1700)	(1.1744)	(1.1822)	(1.1940)	(1.2067)	(1.2373)
Percent of HH earning $25,000 to $75,000		4.2498						
		(1.0219)						
Percent of HH earning less than $75,000			4.2498	3.9217	4.2516	3.5275	4.3317	3.5272
			(1.0219)	(1.0385)	(1.0235)	(1.0399)	(1.0681)	(1.0954)
Ln(Population)	0.3102	0.3189	0.3189	0.3389	0.3063	0.3633	0.4141	0.4562
	(0.0820)	(0.0825)	(0.0825)	(0.0835)	(0.0830)	(0.0841)	(0.0880)	(0.0908)
Percent using public transportation				-3.4491				-3.6543
				(2.0675)				(2.1927)
Percent of population 65 and over					-1.5127			-1.1466
minus the percent 18 and under					(0.8162)			(0.8421)
Manufacturing (share of employment)						3.3882		2.1907
						(0.9695)		(1.0244)
Ln (Distance to nearest city across state border)							-0.2759	-0.2728
							(0.0683)	(0.0709)
County dummy	-0.7787	-0.8576	-0.8576	-0.9227	-0.8300	-0.8899	-1.0489	-1.1190
	(0.2491)	(0.2508)	(0.2508)	(0.2539)	(0.2514)	(0.2521)	(0.2596)	(0.2659)
TIF dummy (1 if state allows TIFs)	1.4658	1.4454	1.4454	1.4170	1.4238	1.4839	1.6000	1.5822
	(0.2145)	(0.2152)	(0.2152)	(0.2165)	(0.2158)	(0.2181)	(0.2252)	(0.2287)
Observations	1022	1022	1022	1022	1022	1022	988	988

Note: The table reports estimated coefficients from logit regressions in which the dependent variable equals 1 if a community offers any of tax abatements, tax credits, or TIFs, and equals zero otherwise. Standard errors are in parentheses. "Ln (Median household income)" is the natural log of community median household income in 1999; "Percent of HH earning less than $25,000" is the percentage of community households earning less than $25,000 in 1999; similarly, "Percent of HH earning $25,000 to $75,000" is the percentage of community households earning between $25,000 and $75,000 in 1999, and "Percent of HH earning less than $75,000" is the percentage of community households earning less than $75,000 in 1999. "Ln (Population)" is the natural log of community population in 2000. "Percent using public transportation" is the fraction of the working population using public transportation to commute to work in 2000. "Percent of population 65 and over minus the percent 18 and under" is the difference in 2000 between the fraction of a community's population 65 years and older and the fraction 18 years and younger. "Manufacturing (share of employment)" is the fraction of a community's workforce employed in manufacturing in 2000. "Ln (Distance to the nearest city across state border)" is the natural logarithm of the distance, in meters, to the closest city or town in another state. "County dummy" takes the value 1 if a community is a county, and zero otherwise. "TIF dummy (1 if state allows TIFs)" takes the value 1 if the state in which a community is located had statutes permitting TIF use in 1999, and is zero otherwise.

Table 3: Tax Incentives as Functions of Community and State Characteristics

(Dependent variable equals 1 if a community offers any of tax abatements, tax credits, or TIFs, and equals zero otherwise.)

Variable	1	2	3	4
Percent of HH earning less than $25,000	0.0633	-0.0824	-0.0922	-0.2837
	(1.2370)	(1.2654)	(1.2445)	(1.2737)
Percent of HH earning less than $75,000	3.6075	3.9009	3.6392	4.0629
	(1.0985)	(1.1234)	(1.1009)	(1.1300)
Ln(Population)	0.4539	0.4240	0.4649	0.4306
	(0.0907)	(0.0931)	(0.0912)	(0.0933)
Percent using public transportation	-4.1711	-3.6566	-4.3187	-4.8615
	(2.2458)	(2.2734)	(2.2376)	(2.3510)
Percent of population 65 and over	-1.1609	-0.3703	-1.4917	-0.7740
minus the percent 18 and under	(0.8443)	(0.8753)	(0.8659)	(0.8941)
Manufacturing (share of employment)	1.9892	1.1001	2.3636	1.1529
	(1.0391)	(1.0823)	(1.0315)	(1.0866)
Ln (Distance to nearest city across state border)	-0.2800	-0.3872	-0.2809	-0.3970
	(0.0713)	(0.0769)	(0.0711)	(0.0771)
Ln (State tax revenue per capita)	0.4318	-0.1855		0.2157
	(0.3679)	(0.6185)		(0.6388)
State corporate tax rate		-0.1114		-0.1305
		(0.0299)		(0.0317)
State sales tax rate		0.3162		0.2860
		(0.0774)		(0.0790)
State personal income tax rate		0.1153		0.1267
		(0.0343)		(0.0351)
State corruption rate			0.0776	0.1176
			(0.0425)	(0.0488)
County dummy	-1.1201	-0.9335	-1.1629	-0.9926
	(0.2659)	(0.2724)	(0.2678)	(0.2741)
TIF dummy (1 if state allows TIFs)	1.6270	1.6191	1.4843	1.5136
	(0.2320)	(0.2393)	(0.2352)	(0.2432)
Observations	988	988	988	988

Note: The table reports estimated coefficients from logit regressions in which the dependent variable equals 1 if a community offers any of tax abatements, tax credits, or TIFs, and equals zero otherwise. Standard errors are in parentheses. "Percent of HH earning less than $25,000" is the percentage of community households earning less than $25,000 in 1999; similarly, "Percent of HH earning less than $75,000" is the percentage of community households earning less than $75,000 in 1999. "Ln (Population)" is the natural log of community population in 2000. "Percent using public transportation" is the fraction of the working population using public transportation to commute to work in 2000. "Percent of population 65 and over minus the percent 18 and under" is the difference in 2000 between the fraction of a community's population 65 years and older and the fraction 18 years and younger. "Manufacturing (share of employment)" is the fraction of a community's workforce employed in manufacturing in 2000. "Ln (Distance to the nearest city across state border)" is the natural logarithm of the distance, in meters, to the closest city or town in another state. "Ln (State tax revenue per capita)" is the natural log of the ratio of total state tax revenue in 1999 to state population on July 1, 1999. "State corporate tax rate" is the top statutory state corporate income tax rate in 1999, "State sales tax rate" is the general state sales tax rate in 1999, and "State personal income tax rate" is the top statutory state personal income tax rate in 1999, all for the state in which a community is located. "State corruption rate" is the number of public officials in the state in which a community is located convicted of federal corruption-related crimes between 1990 and 2002, per 100,000 state residents. "County dummy" takes the value 1 if a community is a county, and zero otherwise. "TIF dummy (1 if state allows TIFs)" takes the value 1 if the state in which a community is located had statutes permitting TIF use in 1999, and is zero otherwise.

Table 4: Tax Abatements and Credits v. TIFs, as Functions of Community Characteristics
(Dependent variable equals 1 if a community offers tax abatements and/or tax credits, but not TIFs; and equals zero if a community offers TIFs but not tax abatements or credits.)

Variable	1	2	3	4	5	6	7	8
Ln (Median household income)	-1.5210							
	(0.3818)							
Percent of HH earning less than $25,000		5.1677	10.6439	10.9591	10.6067	11.5758	11.0683	12.1064
		(1.1314)	(2.3115)	(2.3385)	(2.3248)	(2.4170)	(2.3636)	(2.5073)
Percent of HH earning $25,000 to $75,000		-5.4762						
		(1.9151)						
Percent of HH earning less than $75,000			-5.4762	-5.9258	-5.4999	-6.2879	-5.0629	-6.0726
			(1.9151)	(1.9487)	(1.9224)	(2.0056)	(1.9599)	(2.1075)
Ln(Population)	-0.3502	-0.3713	-0.3713	-0.3101	-0.3694	-0.3205	-0.2043	-0.0870
	(0.1547)	(0.1597)	(0.1597)	(0.1631)	(0.1602)	(0.1638)	(0.1739)	(0.1825)
Percent using public transportation				-8.8329				-9.9701
				(4.0301)				(4.2156)
Percent of population 65 and over					0.2207			-0.1717
minus the percent 18 and under					(1.5450)			(1.5985)
Manufacturing (share of employment)						2.8957		1.8835
						(1.9682)		(2.1053)
Ln (Distance to nearest city across state border)							-0.3317	-0.3755
							(0.1341)	(0.1405)
County dummy	1.6608	1.7689	1.7689	1.6046	1.7611	1.7579	1.4865	1.2557
	(0.5017)	(0.5039)	(0.5039)	(0.5135)	(0.5066)	(0.5078)	(0.5230)	(0.5439)
TIF dummy (1 if state allows TIFs)	-1.1131	-1.1861	-1.1861	-1.3882	-1.1820	-1.1993	-0.8823	-1.1029
	(0.5781)	(0.5877)	(0.5879)	(0.6117)	(0.5887)	(0.5922)	(0.6142)	(0.6452)
Observations	346	346	346	346	346	346	332	332

Note: The table reports estimated coefficients from logit regressions in which the dependent variable equals 1 if a community offers tax abatements and/or tax credits, but not TIFs; and equals zero if a community offers TIFs but not tax abatements or credits. The sample is restricted to communities offering tax credits and/or abatements, but not TIFs, and communities offering TIFs but not tax abatements or credits. Standard errors are in parentheses. "Ln (Median household income)" is the natural log of community median household income in 1999; "Percent of HH earning less than $25,000" is the percentage of community households earning less than $25,000 in 1999; similarly, "Percent of HH earning $25,000 to $75,000" is the percentage of community households earning between $25,000 and $75,000 in 1999, and "Percent of HH earning less than $75,000" is the percentage of community households earning less than $75,000 in 1999. "Ln (Population)" is the natural log of community population in 2000. "Percent using public transportation" is the fraction of the working population using public transportation to commute to work in 2000. "Percent of population 65 and over minus the percent 18 and under" is the difference in 2000 between the fraction of a community's population 65 years and older and the fraction 18 years and younger. "Manufacturing (share of employment)" is the fraction of a community's workforce employed in manufacturing in 2000. "Ln (Distance to the nearest city across state border)" is the natural logarithm of the distance, in meters, to the closest city or town in another state. "County dummy" takes the value 1 if a community is a county, and zero otherwise. "TIF dummy (1 if state allows TIFs)" takes the value 1 if the state in which a community is located had statutes permitting TIF use in 1999, and is zero otherwise.

Table 5: Tax Abatements and Credits v. TIFs, as Functions of Community and State Characteristics
(Dependent variable equals 1 if a community offers tax abatements and/or tax credits, but not TIFs; and equals zero if a community offers TIFs but not tax abatements or credits.)

Variable	1	2	3	4
Percent of HH earning less than $25,000	11.8563	12.9006	11.5483	12.4904
	(2.7456)	(2.8896)	(2.6580)	(2.9964)
Percent of HH earning less than $75,000	-6.5579	-7.5627	-5.2712	-6.9661
	(2.3694)	(2.5387)	(2.2211)	(2.6193)
Ln(Population)	-0.1134	-0.1411	-0.0957	-0.1426
	(0.2006)	(0.2078)	(0.1921)	(0.2120)
Percent using public transportation	-5.9448	-6.2805	-13.6380	-9.5064
	(4.2952)	(4.3588)	(4.4376)	(4.5899)
Percent of population 65 and over	0.2129	-0.9507	-2.5232	-2.5069
minus the percent 18 and under	(1.7457)	(1.8832)	(1.7345)	(1.9834)
Manufacturing (share of employment)	3.8819	3.3565	1.6143	2.7703
	(2.3223)	(2.4646)	(2.2050)	(2.4940)
Ln (Distance to nearest city across state border)	-0.3728	-0.2731	-0.4847	-0.3369
	(0.1520)	(0.1580)	(0.1487)	(0.1616)
Ln (State tax revenue per capita)	-4.7123	-0.8930		0.2560
	(0.7510)	(1.3666)		(1.4434)
State corporate tax rate		-0.1404		-0.1618
		(0.0685)		(0.0704)
State sales tax rate		-0.4472		-0.5272
		(0.1755)		(0.1824)
State personal income tax rate		-0.1642		-0.1547
		(0.0701)		(0.0721)
State corruption rate			0.3896	0.2757
			(0.0857)	(0.0990)
County dummy	1.3218	1.2700	1.1187	1.2131
	(0.5719)	(0.5838)	(0.5605)	(0.5991)
TIF dummy (1 if state allows TIFs)	-1.6372	-1.3472	-1.4604	-1.4331
	(0.6827)	(0.6732)	(0.6734)	(0.6803)
Observations	332	332	332	332

Note: The table reports estimated coefficients from logit regressions in which the dependent variable equals 1 if a community offers tax abatements and/or tax credits, but not TIFs; and equals zero if a community offers TIFs but not tax abatements or credits. The sample is restricted to communities offering tax credits and/or abatements, but not TIFs, and communities offering TIFs but not tax abatements or credits. Standard errors are in parentheses. "Percent of HH earning less than $25,000" is the percentage of community households earning less than $25,000 in 1999; similarly, "Percent of HH earning less than $75,000" is the percentage of community households earning less than $75,000 in 1999. "Ln (Population)" is the natural log of community population in 2000. "Percent using public transportation" is the fraction of the working population using public transportation to commute to work in 2000. "Percent of population 65 and over minus the percent 18 and under" is the difference in 2000 between the fraction of a community's population 65 years and older and the fraction 18 years and younger. "Manufacturing (share of employment)" is the fraction of a community's workforce employed in manufacturing in 2000. "Ln (Distance to the nearest city across state border)" is the natural logarithm of the distance, in meters, to the closest city or town in another state. "Ln (State tax revenue per capita)" is the natural log of the ratio of total state tax revenue in 1999 to state population on July 1, 1999. "State corporate tax rate" is the top statutory state corporate income tax rate in 1999, "State sales tax rate" is the general state sales tax rate in 1999, and "State personal income tax rate" is the top statutory state personal income tax rate in 1999, all for the state in which a community is located. "State corruption rate" is the number of public officials in the state in which a community is located convicted of federal corruption-related crimes between 1990 and 2002, per 100,000 state residents. "County dummy" takes the value 1 if a community is a county, and zero otherwise. "TIF dummy (1 if state allows TIFs)" takes the value 1 if the state in which a community is located had statutes permitting TIF use in 1999, and is zero otherwise.

Table 6: Tax Abatements and Credits v. Infrastructure Spending, as Functions of Community and State Characteristics

(Dependent variable equals 1 if a community offers tax abatements and/or tax credits, but does not concentrate its government expenditures on core infrastructure; and equals zero if a community concentrates its government expenditures on core infrastructure, but does not offer tax abatements or credits.)

Variable	1	2	3
Percent of HH earning less than $25,000	0.1015	0.5039	1.0451
	(1.6390)	(1.7917)	(1.9275)
Percent of HH earning less than $75,000	1.1756	2.1466	2.1530
	(1.5063)	(1.6933)	(1.7966)
Ln(population)	0.3965	0.5132	0.5609
	(0.1250)	(0.1405)	(0.1506)
Percent using public transportation		13.4462	9.0197
		(4.7368)	(4.8670)
Percent of population 65 and over		0.6267	-0.0674
minus the percent 18 and under		(1.4097)	(1.5500)
Manufacturing (share of employment)		1.3063	-0.0509
		(1.5670)	(1.7456)
Ln (Distance to nearest city across state border)		-0.4182	-0.5435
		(0.1177)	(0.1259)
Ln (State tax revenue per capita)			2.3837
			(0.9858)
State corporate tax rate			-0.2428
			(0.0522)
State sales tax rate			0.0871
			(0.1255)
State personal income tax rate			0.1001
			(0.0575)
State corruption rate			0.3591
			(0.0778)
County dummy	1.9856	1.9906	2.0951
	(0.6420)	(0.6568)	(0.6757)
TIF dummy (1 if state allows TIFs)	1.0660	1.4387	1.2346
	(0.3182)	(0.3579)	(0.3758)
Observations	463	444	444

Note: The table reports estimated coefficients from logit regressions in which the dependent variable equals 1 if a community offers tax abatements and/or tax credits, but does not concentrate its government expenditures on core infrastructure; and equals zero if a community concentrates its government expenditures on core infrastructure, but does not offer tax abatements or credits. Communities are defined to concentrate their government expenditures on core infrastructure if the sum of expenditures on air transportation, general public buildings, regular highways, toll highways, private transit subsidies, parking facilities, sewerage, solid waste, sea and inland port facilities, water utilities, electric utilities, gas utilities, and transit utilities exceeds 41.95 percent of total community government spending in 1997. The sample is restricted to communities offering tax credits and/or abatements, but not concentrating their expenditures on core infrastructure, and communities concentrating expenditures on core infrastructure but not offering tax abatements or credits. Standard errors are in parentheses. "Percent of HH earning less than $25,000" is the percentage of community households earning less than $25,000 in 1999; similarly, "Percent of HH earning less than $75,000" is the percentage of community households earning less than $75,000 in 1999. "Ln (Population)" is the natural log of community population in 2000. "Percent using public transportation" is the fraction of the working population using public transportation to commute to work in 2000. "Percent of population 65 and over minus the percent 18 and under" is the difference in 2000 between the fraction of a community's population 65 years and older and the fraction 18 years and younger. "Manufacturing (share of employment)" is the fraction of a community's workforce employed in manufacturing in 2000. "Ln (Distance to the nearest city across state border)" is the natural logarithm of the distance, in meters, to the closest city or town in another state. "Ln (State tax revenue per capita)" is the natural log of the ratio of total state tax revenue in 1999 to state population on July 1, 1999. "State corporate tax rate" is the top statutory state corporate income tax rate in 1999, "State sales tax

rate" is the general state sales tax rate in 1999, and "State personal income tax rate" is the top statutory state personal income tax rate in 1999, all for the state in which a community is located. "State corruption rate" is the number of public officials in the state in which a community is located convicted of federal corruption-related crimes between 1990 and 2002, per 100,000 state residents. "County dummy" takes the value 1 if a community is a county, and zero otherwise. "TIF dummy (1 if state allows TIFs)" takes the value 1 if the state in which a community is located had statutes permitting TIF use in 1999, and is zero otherwise.

Table 7: Infrastructure Spending v. TIFs, as Functions of Community and State Characteristics
(Dependent variable equals 1 if a community concentrates its government expenditures on core infrastructure, but does not offer TIFs; and equals zero if a community offers TIFs, but does not concentrate its government expenditures on core infrastructure.)

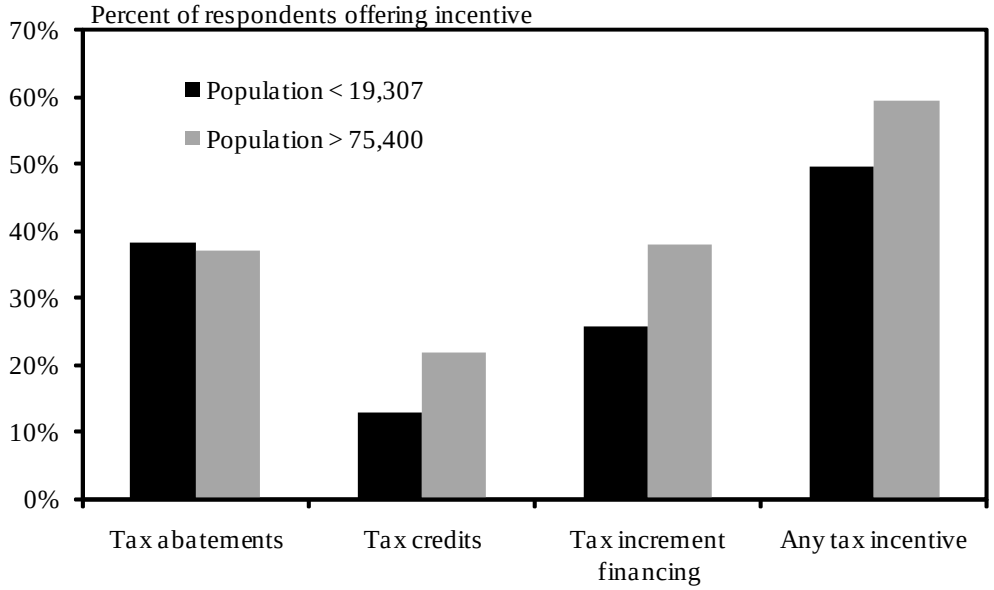
Variable	1	2	3
Percent of HH earning less than $25,000	6.2077	6.7099	6.1167
	(1.8088)	(1.9461)	(2.1337)
Percent of HH earning less than $75,000	-4.6253	-5.9970	-7.0045
	(1.6865)	(1.8456)	(2.0317)
Ln(population)	-0.6469	-0.6546	-0.6570
	(0.1319)	(0.1432)	(0.1518)
Percent using public transportation		-24.1988	-18.9583
		(5.1684)	(5.4528)
Percent of population 65 and over		-1.6484	-2.2014
minus the percent 18 and under		(1.3808)	(1.5298)
Manufacturing (share of employment)		-1.3284	1.9176
		(1.6161)	(1.8818)
Ln (Distance to nearest city across state border)		0.1426	0.2678
		(0.1111)	(0.1272)
Ln (State tax revenue per capita)			-3.4084
			(1.1069)
State corporate tax rate			0.1239
			(0.0509)
State sales tax rate			-0.4645
			(0.1462)
State personal income tax rate			-0.1426
			(0.0573)
State corruption rate			-0.0823
			(0.0796)
County dummy	-0.9519	-1.1971	-1.3025
	(0.6818)	(0.6962)	(0.7177)
TIF dummy (1 if state allows TIFs)	-1.3086	-1.4998	-1.7744
	(0.3586)	(0.3802)	(0.4305)
Observations	446	441	441

Note: The table reports estimated coefficients from logit regressions in which the dependent variable equals 1 if a community concentrates its government expenditures on core infrastructure, but does not offer TIFs; and equals zero if a community offers TIFs, but does not concentrate its government expenditures on core infrastructure. Communities are defined to concentrate their government expenditures on core infrastructure if the sum of expenditures on air transportation, general public buildings, regular highways, toll highways, private transit subsidies, parking facilities, sewerage, solid waste, sea and inland port facilities, water utilities, electric utilities, gas utilities, and transit utilities exceeds 41.95 percent of total community government spending in 1997. The sample is restricted to communities concentrating their government expenditures on core infrastructure, but not offering TIFs, and communities offering TIFs, but not concentrating their government expenditures on core infrastructure. Standard errors are in parentheses. "Percent of HH earning less than $25,000" is the percentage of community households earning less than $25,000 in 1999; similarly, "Percent of HH earning less than $75,000" is the percentage of community households earning less than $75,000 in 1999. "Ln (Population)" is the natural log of community population in 2000. "Percent using public transportation" is the fraction of the working population using public transportation to commute to work in 2000. "Percent of population 65 and over minus the percent 18 and under" is the difference in 2000 between the fraction of a community's population 65 years and older and the fraction 18 years and younger. "Manufacturing (share of employment)" is the fraction of a community's workforce employed in manufacturing in 2000. "Ln (Distance to the nearest city across state border)" is the natural logarithm of the distance, in meters, to the closest city or town in another state. "Ln (State tax revenue per capita)" is the natural log of the ratio of total state tax revenue in 1999 to state population on July 1, 1999. "State corporate tax rate" is the top statutory state corporate income tax rate in 1999, "State sales tax rate" is the general state sales tax rate in 1999, and "State personal income tax rate" is the top statutory state personal income tax rate in 1999, all for

the state in which a community is located. "State corruption rate" is the number of public officials in the state in which a community is located convicted of federal corruption-related crimes between 1990 and 2002, per 100,000 state residents. "County dummy" takes the value 1 if a community is a county, and zero otherwise. "TIF dummy (1 if state allows TIFs)" takes the value 1 if the state in which a community is located had statutes permitting TIF use in 1999, and is zero otherwise.

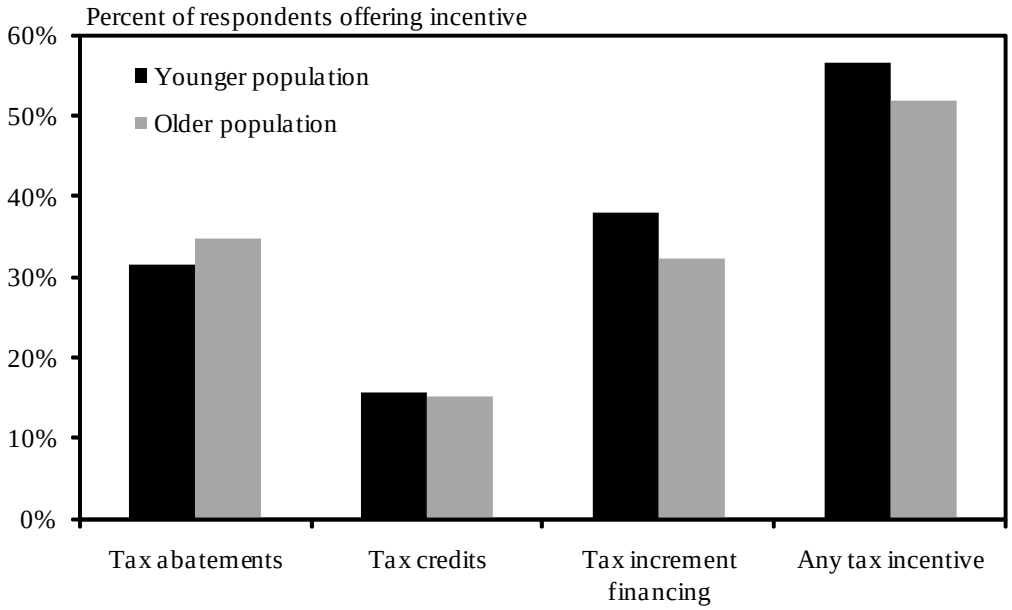
APPENDIX

Figure A1: Population Size and Tax Incentive Alternatives



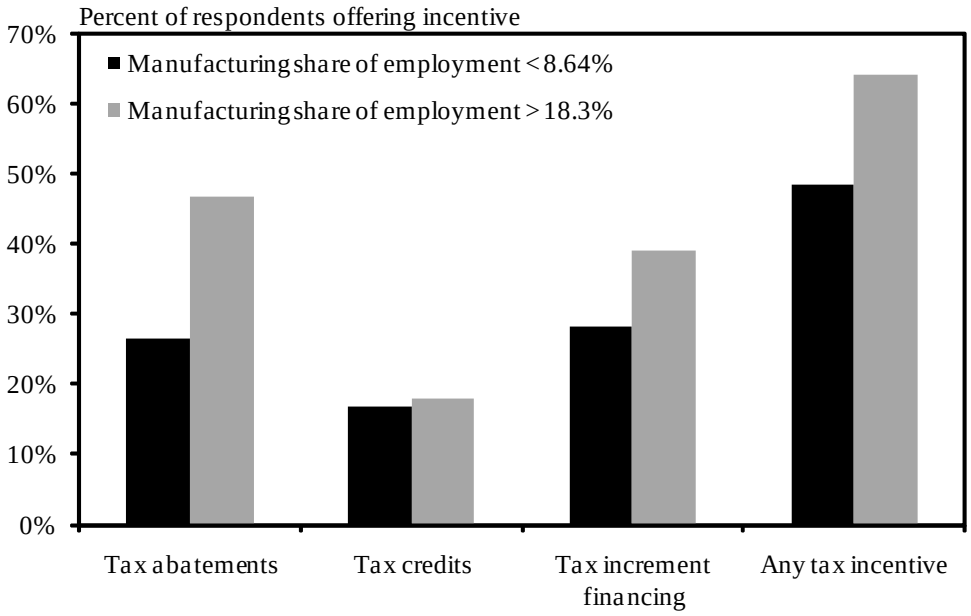
Note: The first pair of bars depicts fractions of communities offering tax abatements; the second pair of bars depicts fractions of communities offering tax credits; the third pair of bars depicts fractions of communities offering TIFs; and the fourth pair of bars depicts fractions of communities offering any of these tax-based incentives. In each pair the left bar corresponds to the 25 percent of communities in the sample with fewer than 19,307 residents, and the right bar to the 25 percent of communities in the sample with more than 75,400 residents.

Figure A2: Population Ages and Tax Incentive Alternatives



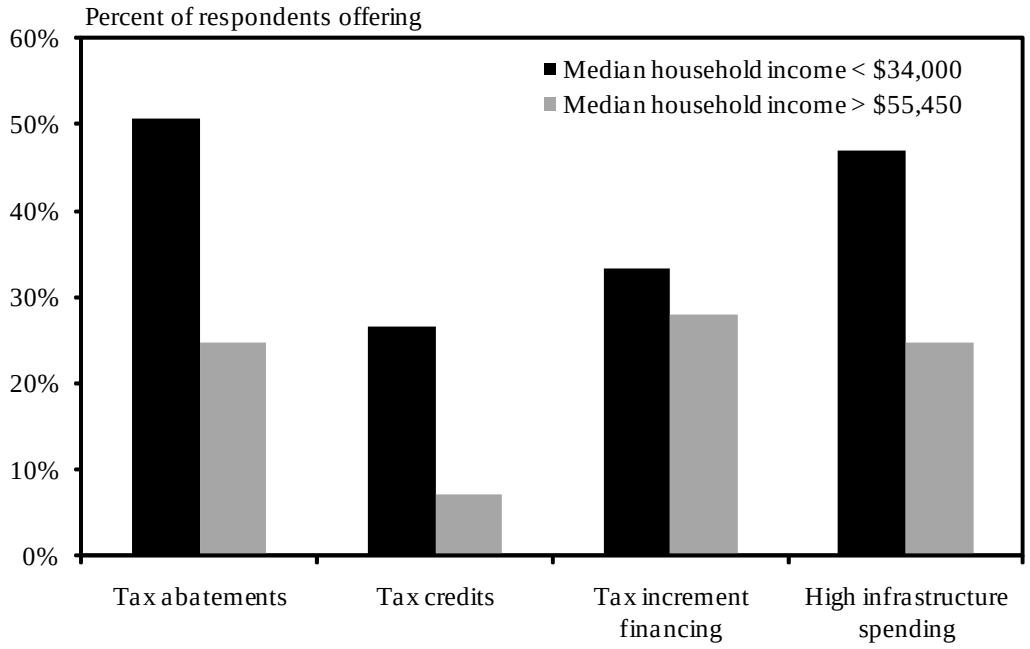
Note: The first pair of bars depicts fractions of communities offering tax abatements; the second pair of bars depicts fractions of communities offering tax credits; the third pair of bars depicts fractions of communities offering TIFs; and the fourth pair of bars depicts fractions of communities offering any of these tax-based incentives. In each pair the left bar corresponds to the 25 percent of communities in which the fraction of the population 18 years and under exceeds the fraction 65 years and over by more than 18.9 percent, and the right bar to the 25 percent of communities in which the difference between these fractions is less than 9.35 percent.

Figure A3: Manufacturing Employment and Tax Incentive Alternatives



Note: The first pair of bars depicts fractions of communities offering tax abatements; the second pair of bars depicts fractions of communities offering tax credits; the third pair of bars depicts fractions of communities offering TIFs; and the fourth pair of bars depicts fractions of communities offering any of these tax-based incentives. In each pair the left bar corresponds to the 25 percent of communities in which less than 8.64 percent of the workforce is employed in manufacturing, and the right bar to the 25 percent of communities in which more than 18.3 percent is employed in manufacturing.

Figure A4: Income Levels, Tax Incentives and Infrastructure Spending



Note: The first pair of bars depicts fractions of communities offering tax abatements; the second pair of bars depicts fractions of communities offering tax credits; the third pair of bars depicts fractions of communities offering TIFs; and the fourth pair of bars depicts fractions of communities whose expenditures on core infrastructure exceed 41.95 percent of total government spending. (The 41.95 percent cutoff level is chosen so that the number of communities defined to have high infrastructure spending equals the number offering TIFs.) In each pair the left bar corresponds to the 25 percent of the sample with median incomes below $34,000, and the right bar to the 25 percent of the sample with median incomes exceeding $55,450.